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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,652	02/28/2002	William R. Ashurst	02307V-121600US	6884

20350 7590 05/04/2005

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EXAMINER	
MARKHAM, WESLEY D	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,652	ASHURST ET AL.	
	Examiner	Art Unit	
	Wesley D. Markham	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 9-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of the amendment filed by the applicant on 2/10/2005 (with a certificate of mailing dated 2/8/2005), in which Claim 10 was amended. **Claims 1 – 6 and 9 – 21** are currently pending in U.S. Application Serial No. 10/086,652, and an Office action on the merits follows.

Response to Declaration under 37 CFR 1.131

2. The declaration filed on 2/10/2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Leung et al. reference. To begin, the examiner notes that the declaration filed on 2/10/2005 is a declaration by Mr. William R. Ashurst with confirmation by all other co-inventors, which includes a transcription of the entries in Exhibit B of the March 4 declaration of Mr. Ashurst, plus the declarant's explanation of each of the entries. The examiner also notes that all the claims pending in the instant application (i.e., Claims 1 – 6 and 9 – 21) were rejected under 35 U.S.C. 103 based, at least in part, on the Leung et al. reference. However, the aforementioned 37 CFR 1.131 declaration does not contain an allegation that the acts relied upon to establish the date prior to the reference or activity (i.e., prior to May 7, 2001) were carried out in this country or in a NAFTA country or WTO member country. See MPEP 715.07(c), which states that a 37 CFR 1.131 affidavit or declaration must contain an allegation that the acts relied upon to establish the date prior to the reference or activity were carried out in this country or in a NAFTA country or WTO

member country. See also 35 U.S.C. 104. For this reason, the 37 CFR 1.131 declaration filed on 2/10/2005 is ineffective to overcome / antedate the Leung et al. reference. The examiner does note that the evidence presented in the declaration, along with the applicant's previous arguments submitted on 6/21/2004, does appear to be sufficient to establish a reduction to practice of the claimed invention prior to the effective date of the Leung et al. reference (i.e., 5/7/2001).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejection of Claim 10 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraph 5 of the previous Office action (i.e., the non-final Office action mailed on 11/8/2004), is withdrawn in light of the applicant's amendment to clarify the antecedent basis issue raised by the examiner.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 – 4, 13, 14, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Robbart (USPN 4,554,215).

7. Regarding independent **Claim 1**, Robbart teaches a method for applying a silane coating to a cellulosic web (i.e., a surface that is at least partially wettable by water), the method comprising exposing the surface to a vapor-phase dihalodi(C_1-C_3 alkyl)silane under conditions resulting in the reaction of the silane with hydroxyl (OH) groups on the surface of the cellulosic web (Abstract, Col.1, lines 6 – 12, Col.2, lines 15 – 43, Col.3, lines 7 – 60, Col.4, lines 1 – 32 and 58 – 68, and Col.5, lines 1 – 37). The total pressure during the exposure is, for example, 1 Torr (a value within the applicant's claimed range) (Col.3, lines 57 – 60). The cellulosic web is also exposed to moisture and humidity in the air (i.e., water vapor) during the silane exposure process (Col.2, lines 24 – 25, Col.3, line 35, Col.5, lines 18 – 22), but the air to be mixed with the silane in the treatment step should contain as little water as possible to avoid significant reaction of water in the air with the silane, which produces undesirable by-products and reduces the amount of silane available to react with the cellulosic material (i.e., the atmosphere is "non-oxidizing", as claimed by the applicant) (Col.5, lines 3 – 8). Robbart does not explicitly teach that that the conditions result in the bonding of di(C_1-C_3 alkyl)silyloxy groups to the surface of the web. However, the "conditions" of the process of Robbart, including (1) the specific vapor-phase silane compound utilized (DCDMS), (2) the surface to be treated (i.e.,

one that comprises hydroxyl groups), (3) the process temperature, and (4) the process pressure, are the same as the applicant's claimed and disclosed process "conditions". Therefore, unless essential process steps and/or limitations are missing from the applicant's claims, the process of Robbart would have inherently resulted in the bonding of di(C_1-C_3 alkyl)silyloxy groups to the surface because the process conditions of Robbart are the same as the applicant's process conditions. Regarding **Claims 2 and 3**, Robbart also teaches that the dihalodi(C_1-C_3 alkyl)silane is a dichlorodi(C_1-C_3 alkyl)silane (Claim 2), specifically dichlorodimethylsilane (i.e., DCDMS) (Claim 3) (Col.4, line 29). Regarding **Claim 4**, the cellulosic web of Robbart is hydrophilic (Col.3, lines 7 – 16 and 29 – 30; Col.5, line 21). Regarding **Claims 13 and 14**, the total pressure during the exposure is, for example, 1 Torr (a value within the applicant's claimed range) (Col.3, lines 57 – 60). Regarding **Claim 19**, the cellulosic web of Robbart has exposed hydroxyl groups (Col.2, lines 20 – 40).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 11, 12, and 15 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robbart.

11. Robbart teaches all the limitations of **Claims 11 and 12** as set forth above in paragraph 7, except for a method wherein the DCDMS is at a partial pressure of from about 0.5 torr to about 5 torr, particularly from about 1.0 to about 3.0 torr. Specifically, Robbart is silent regarding the partial pressure of the DCDMS. However, the overall pressure in the reaction zone can vary widely (e.g., 1 torr to about 760 torr) (Col.3, lines 57 – 60), and the concentration of the silane in the atmosphere (i.e., the "partial pressure" of the silane) is a variable that influences other factors, such as how long the exposure should last (Col.3, lines 22 – 56). In other words, Robbart teaches that the concentration / partial pressure of the silane in the atmosphere is a result / effective variable that influences how long the cellulosic web should be exposed to the atmosphere. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the DCDMS partial pressure in the process of Robbart as a result / effective variable through routine experimentation (e.g., in order to optimize the contact time).

12. Robbart teaches all the limitations of **Claims 15 and 16** as set forth above in paragraph 7, except for a method wherein the exposure is performed at a temperature of from about 0° C to about 85° C, particularly from about 15° C to about 50° C. However, Robbart does teach that the temperature during the exposure is from 50° F to about 200° F (i.e., 10 – 93° C) (Col.3, lines 32 – 39), which is a range of temperatures that overlaps / encompasses the applicant's claimed range. Therefore, it would have been obvious to one of ordinary skill in the art to utilize an exposure temperature within the range claimed by the applicant because Robbart teaches that temperatures in the claimed range are suitable for such a process. Please note that, in a case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists (MPEP 2144.05).

13. Robbart teaches all the limitations of **Claims 17 and 18** as set forth above in paragraph 7, except for a method wherein the exposure is performed for a continuous exposure time of from about 3 minutes to about 30 minutes, particularly of from about 10 minutes to about 20 minutes. However, Robbart does teach that the contact time will vary depending on a number of factors, such as the temperature, the concentration of the silane, the pressure within the reaction zone, and the moisture content of the substrate (Col.3, lines 23 – 56). In other words, Robbart teaches that the exposure time is a result / effective variable that is determined by a combination of other process parameters. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the exposure time in the process of Robbart as a result / effective variable through routine experimentation

based on the specific combination of process parameters used by the purveyor in the art during the exposure (e.g., the temperature, the concentration of the silane, the pressure within the reaction zone, and the moisture content of the substrate, as taught by Robbart).

14. **Claims 1 – 6, 9, 10, and 13 – 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (USPN 6,576,489 B2) in view of Mayer et al. ("Chemical vapor deposition of fluoroalkylsilane monolayer films for adhesion control in microelectromechanical systems", Sept/Oct 2000) for the reasons set forth in paragraph 9 of the Office Action mailed on 6/3/2004. Please note that the 37 CFR 1.131 declaration filed on 2/10/2005 is not effective to overcome / antedate the Leung et al. reference for the reasons set forth in paragraph 2 above.

15. **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (USPN 6,576,489 B2) in view of Mayer et al., in further view of Breen et al. (US 2002/0172895 A1) for the reasons set forth in paragraph 11 of the Office Action mailed on 6/3/2004.

16. **Claims 1 – 5 and 13 – 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (USPN 6,190,003 B1) for the reasons set forth in paragraph 13 the Office Action mailed on 6/3/2004.

17. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (USPN 6,190,003 B1) in view of Kim et al. ("A new class of surface modifiers for stiction reduction", 1999).

18. Sato et al. teaches all the limitations of **Claims 6 and 21** as set forth above in paragraph 16, except for a method wherein the surface is hydroxyl-terminated polysilicon. However, Sato et al. does teach that the surface is hydroxyl-terminated silicon in general (Figure 6 and Col.7, lines 49 – 52) and the deposition process is carried out so that components do not stick together (Abstract). Kim et al. teaches that silane coatings such as those deposited on the surface of Sato et al. are generally deposited on polysilicon in order to avoid "stiction" (Abstract and page 189). Therefore, it would have been obvious to one of ordinary skill in the art to perform the process of Sato et al. specifically on a hydroxyl-terminated polysilicon surface (i.e., as opposed to a hydroxyl-terminated silicon surface in general) with the reasonable expectation of success and obtaining similar results, regardless of whether the silicon surface of Sato et al. is polycrystalline or amorphous.

19. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (USPN 6,190,003 B1) in view of either Schnable et al. (USPN 4,196,232) or Arkles et al. (USPN 6,586,056 B2).

20. Sato et al. teaches all the limitations of **Claims 9 and 10** as set forth above in paragraph 16, except for a method wherein the gaseous mixture used during the exposure consists of DCDMS, water vapor, and an inert gas, particularly molecular

nitrogen. Specifically, Sato et al. reasonably suggests that the gaseous mixture consist of water vapor and DCDMS (Col.10, lines 4 – 14, Col.12, lines 27 – 46) and is silent regarding the inclusion of any inert gas such as nitrogen. Sato et al. teaches that moisture is added to the atmosphere at some point during the deposition process (Col.10, lines 13 – 14), but is silent as to how the moisture is added. Schnable et al. teaches that, in a CVD process involving a gaseous silane, water vapor is added to the atmosphere by passing an inert gas such as molecular nitrogen (N_2) through a bubbler containing water in order to saturate the nitrogen with water vapor, and then introducing the saturated nitrogen gas into the reaction chamber atmosphere (Col.2, lines 24 – 40). It would have been obvious to one of ordinary skill in the art to introduce the moisture (water vapor) to the atmosphere in the process of Sato et al. by using the method of Schnable et al. (i.e., passing an inert gas such as molecular nitrogen (N_2) through a bubbler containing water in order to saturate the nitrogen with water vapor, and then introducing the saturated nitrogen gas into the atmosphere) with the reasonable expectation of successfully and advantageously using a well-known method of introducing water vapor into a silane-containing atmosphere in a vapor deposition process. In other words, by using the process of Schnable et al. to introduce the water vapor, the goal of Sato et al. (i.e., adding moisture to the atmosphere) is beneficially achieved. In performing this process, the gaseous mixture used during the exposure consists of DCDMS, water vapor, and an inert gas, particularly molecular nitrogen, as claimed by the applicant. Alternatively, Arkles et al. teaches that it is typical to use a carrier gas such as

nitrogen with a silane precursor gas during a vapor deposition process (Abstract, Col.6, lines 48 – 51). Therefore, it would have been obvious to one of ordinary skill in the art to include a carrier gas such as nitrogen along with the DCDMS and the water vapor in the process of Sato et al. with the reasonable expectation of successfully and advantageously delivering the gases / vapors to the deposition area while using a carrier gas (e.g., nitrogen) to regulate their flow and introduction, as is well-known in the art as exhibited by Arkles et al.

21. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (USPN 6,190,003 B1) in view of Robbart.

22. Sato et al. teaches all the limitations of **Claims 11 and 12** as set forth above in paragraph 16, except for a method wherein the DCDMS is at a partial pressure of from about 0.5 torr to about 5 torr, particularly from about 1.0 to about 3.0 torr. Specifically, Sato et al. is silent regarding the partial pressure of the DCDMS. However, Robbart teaches that, in the art of vapor depositing a coating from a silane such as DCDMS (e.g., a process analogous to that of Sato et al.), the concentration of the silane in the atmosphere (i.e., the "partial pressure" of the silane) is a variable that influences other factors, such as how long the exposure / deposition should last (Col.3, lines 22 – 56). In other words, Robbart teaches that the concentration / partial pressure of the silane in the atmosphere is a result / effective variable that influences how long the substrate should be exposed to the atmosphere. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the DCDMS partial

pressure in the process of Sato et al. as a result / effective variable through routine experimentation (e.g., in order to optimize the silane exposure time).

Response to Arguments

1. Applicant's arguments filed on 2/10/2005 have been fully considered but they are not persuasive.
2. Regarding the 35 U.S.C. 102 and 103 rejections based on Robbart, the applicant argues that Robbart teaches away from the limitations of the present invention because (1) Robbart teaches using dry vapors of the silane and to avoid moisture in the atmosphere, while the applicant's claims require the presence of water vapor in the reaction environment, and (2) Robbart teaches that the atmosphere used in the process is air, while the applicant's claims require a non-oxidizing atmosphere.
3. In response, these arguments are not convincing. Regarding issue (1), Robbart does not teach or suggest that the atmosphere is completely void of water vapor, as the applicant seems to assert. On the contrary, Robbart teaches that the air to be mixed with the silane should contain as little water as possible to avoid significant reaction of water in the air with the silane (Col.5, lines 3 – 8). At the very least, this teaching suggests that at least a small amount of water vapor is present in the air (e.g., an amount that causes an insignificant reaction with the silane to occur). Additionally, Robbart explicitly teaches that "prevailing humidity" is present during the treatment (Col.5, lines 18 – 20), which is equivalent to teaching that water vapor is present in the reaction environment as required by the applicant's claims. Further, Robbart

explicitly teaches that "moisture" is present during the silane vapor treatment (Col.2, lines 15 – 26), which is equivalent to teaching that water vapor (e.g., as either the moisture itself, or as the water vapor partial pressure in equilibrium with the moisture in the cellulosic base stock) is present in the reaction environment as required by the applicant's claims. Regarding issue (2), the examiner agrees with the applicant that air is used in the reaction atmosphere of Robbart. However, the air to be mixed with the silane in the treatment step should contain as little water as possible to avoid significant reaction of water in the air with the silane, which produces undesirable by-products and reduces the amount of silane available to react with the cellulosic material (Col.5, lines 3 – 8). As such, the examiner has reasonably interpreted the air-based atmosphere of Robbart to be "non-oxidizing", as recited in the applicant's claims, because the atmosphere does not oxidize the silane or the substrate. Please note that applicant's independent Claim 1, which recites a "non-oxidizing atmosphere", does not exclude air as the applicant appears to argue. In fact, the applicant's claimed "non-oxidizing atmosphere" includes water vapor. If air, *per se*, is excluded from a "non-oxidizing atmosphere" in the context of the applicant's claims, water vapor would certainly also be excluded (which it is not).

4. Regarding the rejections based on Sato et al., the applicant argues that the primary focus of Sato et al. is a silane (HMDS) that is far removed structurally from the silanes recited in the applicant's claims. The applicant states that the only mention of DCDMS in the Sato et al. reference is its inclusion in a list in Col.12, with no supporting explanation of the similarities or differences (or advantages or

disadvantages) between it and any of the other silanes mentioned. The applicant argues that, considering the fundamental structural differences between HMDS and DCDMS, one skilled in the art would not find the teachings of Sato et al. to provide an enabling disclosure for dihalodialkylsilanes and would consider the teachings to be tantamount to "obvious to try", which is not the standard of obviousness.

5. In response, this argument is not convincing. The examiner begins by noting that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments (see MPEP 2122). In this case, the examiner agrees with the applicant that the primary focus of Sato et al. is HMDS, which is a silane compound not encompassed by the applicant's claimed invention. However, Sato et al. explicitly teaches, "In fact, HMDS is only one member of a class of materials that may be used in accordance with the present invention. The class may be generally defined as organosilicate compounds having a hydrophobic functional group and the ability to react with a hydroxyl group." Sato et al. explicitly teaches that DCDMS, a compound encompassed by the applicant's claims, falls within this class of compounds, and "Experiments showed that what has been discussed above with reference to HMDS applies to the other members of the group in substantially the same way" (Col.12, lines 27 – 46). Therefore, one of ordinary skill in the art would have been motivated to utilize DCDMS in the process of Sato et al. in "substantially the same way" as HMDS is utilized (e.g., under the same or similar process conditions), with the reasonable expectation of success and obtaining similar results (i.e., successfully depositing a

hydrophobic silane film, regardless of whether HMDS or DCDMS is utilized as the precursor). The examiner is not suggesting that HMDS and DCDMS are identical in terms of either structure or reactive behavior in each and every situation or circumstance! However, it is clear that the class of silane compounds generally defined by Sato et al. as organosilicate compounds having a hydrophobic functional group and the ability to react with a hydroxyl group (a class taught by Sato et al. to include HMDS and DCDMS) do function in substantially the same manner in the context of the process of Sato et al. Sato et al. explicitly discloses reaction conditions (temperature, pressure, time period, etc.) that are useful for depositing a hydrophobic film using one member of the class of silane compounds (HMDS) (Col.9, lines 34 – 50) and then states that experiments have shown the other members of the class (e.g., DCDMS) can be used in substantially the same way. This is not only an enabling disclosure of DCDMS, but a suggestion to one of ordinary skill in the art to utilize DCDMS as a precursor to deposit the hydrophobic film. Please note that, when a prior art reference makes obvious all of the elements of a claimed invention, the reference is presumed to be operable and the burden is on applicant to provide facts rebutting the presumption of operability (MPEP 2121). The only evidence submitted by the applicant to rebut the *prima facie* case of an enabling disclosure is the general argument that HMDS and DCDMS are structurally dissimilar and therefore would not have been expected to have the same reactive behavior. This argument alone is not sufficient to rebut the *prima facie* case set forth by the examiner based on the Sato et al. reference. Additionally, even if DCDMS

and HMDS do not function / react in exactly the same manner in the process of Sato et al., it is to be presumed that skilled workers would as a matter of course, if they do not immediately obtain desired results, make certain experiments and adaptations, within the skill of the competent worker (*In re Michalek*, 162 F.2d 229, 74 USPQ 107 (CCPA 1947); *In re Reid*, 179 F.2d 998, 84 USPQ 478 (CCPA 1950)).

6. Also regarding the Sato et al. reference, the applicant argues that what applicant's were able to achieve in ten minutes at ambient temperature and a pressure of 1.5 torr, Sato et al. are only able to report that it took 20 hours to achieve at atmospheric pressure. In other words, the applicant has shown that effective results are obtained with a combination of low pressure, low temperature, and very short reaction time, which is non-obvious and contrary to expectations.

7. In response, this argument is not convincing. The applicant appears to be arguing that, by using DCDMS instead of HMDS, "unexpected results" are obtained (i.e., effective results are obtained with a combination of low pressure, low temperature, and very short reaction time). However, based on the art and evidence of record, the alleged "unexpected results" cannot be directly attributed to the use of DCDMS instead of HMDS. For example, there is no evidence on the record comparing the required duration of the silane treatment process for DCDMS and HMDS under otherwise identical process conditions (i.e., when the only difference is the specific silane precursor utilized). The "20 hours" teaching in Sato et al. relied upon by the applicant appears to be due, at least in part, to the complex nature / topography of the substrate to be coated (Col.7, lines 30 – 46). Additionally, no results are shown

in which the partial pressure / concentration of each silane compound used in the deposition process (DCDMS vs. HMDS) is the same. The concentration of the silane compound in the vapor would, of course, be expected to influence the required duration of the deposition process. Further, the combination of features argued by the applicant (a combination of low pressure, low temperature, and very short reaction time) is not recited in any of the presently pending claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also, the evidence of unexpected results must be commensurate in scope with the claims which the evidence is offered to support (*In re Clemens*, 622 F.2d 1029, 206 USPQ 289, 296 (CCPA 1980)).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WDM

Wesley D Markham
Examiner
Art Unit 1762

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER